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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,399	09/27/2000	Masao Washizu	001268	7255

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EXAMINER
BROWN, JENNINE M

ART UNIT	PAPER NUMBER
1755	10

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-10

	Application No.	Applicant(s)	
Advisory Action	09/670,399	WASHIZU ET AL.	
	Examiner	**Art Unit**	
	Jennine M. Brown	1755	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 27 September 2000 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 4 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ they raise the issue of new matter (see Note below);
   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____.
3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *See Continuation Sheet*.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: _____.

   Claim(s) objected to: _____.

   Claim(s) rejected: _____.

   Claim(s) withdrawn from consideration: _____.
8. ☐ The proposed drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.
10. ☐ Other: _____

Continuation of 5. does NOT place the application in condition for allowance because: 1. Becker, et al. teach dielectrophoretic fields in Figure 2 (DEP is used with a force arrow indicating the electrical field force on a polarized packet or bead) and states specifically in column 8, "Dielectrophoretic forces may arise when a packet is placed in an inhomogeneous electrical field (AC or DC)." Furthermore, Becker, et al. teach the equivalence of electrophoretic and dielectrophoretic fields, "Forces F1 or F2 may include many different types of forces. For instance, forces F1 and F2 may be dielectrophoretic, electrophoretic, optical, ... mechanical ...or any other suitable type of force (or combination thereof)." Applicants admit to the equivalence of electrophoretic forces and dielectrophoretic forces in their own specification, (page 14, lines11-15) "This phenomenon in which neutral molecules move under a nonuniform electric field is called dielectrophoresis (DEP), and the force received by molecules during that time is called dielectrophoretic force. If molecules are charged ones, the moving mode is such one as comprising electrophoretic forces in addition to dielectric forces." Regarding the parameters in dielectrophoretic forces, again Applicants specification does not state that the electrode shape is a parameter, only the permittivity and conductivity which are the material that the electrode is made of are important as stated (page 26, lines 10-14), "It can be understood from the above mentioned general equation of dielectrophoretic forces that parameters involved in dielectrophoretic forces of substances receiving dielectrophoretic forces are, in general, permittivity and conductivity of the substances and the medium, the size of the substances, and the frequency of the applied electric field." The field used is also stated such that it is inherent to the controller of the electric field and not the electrodes in Applicants specification (page 27, lines 22-24), "In the present invention, the electric field to be applied can be any of an AC electric fields and a DC electric field, and is generally preferable to use the AC electric field." Becker, et al. teach the same in column 4, "The addressing of electrode elements with electrical signals may initiate different field distributions and generate dielectrophoretic manipulation forces that trap, repel, transport, or perform other manipulations upon packets on and above the electrode plane. By programmably addressing electrode elements within the array with electrical signals, electric field distributions and manipulation packets may be manipulated along arbitrarily chosen or predetermined paths." The definition of non uniform field then needs to be determined to see where Applicants arguments are being determined by the specification. The only references to the non uniform field are in the amended specification page 3, lines 9-12, "the field being formed by electrodes which have a structure capable o forming a horizontally and vertically ununiform electric field" where Applicants alledge the electrode structure is what gives the field its "nonuniformity". It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138. Regarding the definition of "packet" and its equivalence, page 2 of Becker, et al. states "As used herein, 'packet' refers to compartmentalized matter and may refer to a fluid packet, an encapsulated packet, and/or a solid packet. A fluid packet refers to one or more packets of liquids and gases ... A fluid packet may refer to a droplet of water, a droplet of reagent, a droplet of solvent, a droplet o solution, a droplet of a sample, a particle or cell suspension, a droplet of an intermediate product, a droplet of a final reaction product or a droplet of any material ... An encapsulated packet refers to a packet enclosed by a layer of material. An encapsulated packet may refer to vesicle or other microcapsule of liquid or gas that may contain reagent, sample, a particle, a cell, an intermediate product, a fina reaction product, or any material. The surface of an encapsulated packet may be coated with a reagent, a sample, a particle or a cell, a intermediate product, a final reaction product or any material ... A solid packet refers to a solid material that may contain, or be covered with a reagent, a sample, a particle or cell, an intermediate product, a final reaction product, or any material. An example of a solid packet is a latex microsphere with reagent bound to its surface suspended in an aqueous solution." Unfortunately the particular electrod structures are not claimed by Applicants in any of the primary method claims to distinugish them over the reference of Regnier, et al. therefore as the claim is written, Examiner maintains the previous 102(e) rejection under Becker, et al.

2. Regnier, et al. teach electrophoretic and electroosmotic fields to move a packet in an electrical field (column 4, lines 50-54) "The control of the parameters of the methods described herein, e.g. sample volume, reactant volume, electric potential, capillary length, electroosmotic flow, etc., confers on one of skill in the art exquisite control over the chemical reaction itself and thus of the sensitivity of the system". In column 26, lines 20-25 Regnier, et al. teach that "The experimental parameters which may be varied within any method of the invention include electro-osmotic flow, electrophoretic mobility, nature of the electrophoretic medium, pH, temperature, ionic strength, viscosity, sample volume, electric potential, length of capillary, detection method, and the concentrations of reacting species." Furthermore, column 3, lines 15-19, "One of skill in the art may manipulate a range of experimental parameters of the inventive methods which allow control of the engagement and disengagement of the competitor and reactant zones, as well as selective monitoring of the detectable product". Regnier, et al. teach electrodes (18 and 20) which are used to deliver applied potential to the capillary and optional programmable computer which may be programmed to direct the waveform generator the produce the amplitude or frequency desired in a given electrophoretic chemical reaction. (col. 33, l. 29-52). Applicants admit to the equivalence of electrophoretic forces and dielectrophoretic forces in their own specification, (page 14, lines11-15) "This phenomenon in which neutral molecules move under a nonuniform electric field is called dielectrophoresis (DEP), and the force received by molecules during that time is called dielectrophoreti force. If molecules are charged ones, the moving mode is such one as comprising electrophoretic forces in addition to dielectric forces." Regarding the parameters in dielectrophoretic forces, again Applicants specification does not state that the electrode shape is a parameter, only the permittivity and conductivity which are the material that the electrode is made of are important as stated (page 26, lines 10-14), "It can be understood from the above mentioned general equation of dielectrophoretic forces that parameters involved in dielectrophoretic forces of substances receiving dielectrophoretic forces are, in general, permittivity and conductivity of the substances and the medium, the size of the substances, and the frequency of the applied electric field." The field used is also stated such that it is inherent to the controller of the electric field and not the electrodes in Applicants specification (page 27, lines 22-24), "In the present invention, the electric field to be applied can be any of an AC electric fields and a DC electric field, and is generally preferable to use the AC electric field." The definition of non uniform field then needs to be determined to see where Applicants arguments are being determined by the specification. The only references to the non uniform field are in the amended specification page 3, lines 9-12, "the field being formed by electrodes which have a structure capable of forming a horizontally and vertically ununiform electric field" where Applicants alledge the electrode structure is what gives the field its "nonuniformity". It has been held that the recitation that an element i "capable of" performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a

limitation in any patentable sense. In re Hutchison, 69 USPQ 138. Because Applicants specification teach equivalence of electrophoretic and dielectrophoretic forces generated at electrodes which can be uniform or non uniform based on the controller used and the controller stated in the Regnier, et al. reference can be used to generate multiple waveforms which could inherently be used to generate an inhomogeneous field, Examiner maintains the previous 102(e) rejection under Regnier, et al.

3. Regnier, et al. in view of Becker, et al. In response to Applicants arguments that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgement on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper. In re McLaughlin, 443 F.2s 1392; 170 USPQ 209 (CCPA 1971). It was known in the art in Becker's application that dielectrophoretic forces can be used in a capillary electrophoretic apparatus and that those forces can be inhomogeneous as shown above and the analyte/competitor and/or immobilized reactant on the beads used in Regnier et al. were also well known as methods of binding antigen/antibody, RNA, DNA, affinity ligands, enzymes, substrates, peptides, peptide nucleic acids, oligonucleotides, biotins and their target binding complexes, lectins and their target carbohydrate binding complexes, cellular receptor binding proteins and their cofactors, antagonists, agnoists, inhibitors and simulators, organelles and organisms are envisioned as being supported or unsupported in the method of combining for reaction then subsequent separation of the product formed for analytical testing purposes. Examiner has not reconstructed based on the method or teachings of the instant application but upon those of prior art already available to Applicants and is therefore not a hindsight teaching gleaned only from Applicants disclosure and is therefore proper and maintained by Examiner.

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